

# **Who Earns More? Explicit Traits, Implicit Motives and Income Growth Trajectories**

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## **Abstract**

Building on career self-management perspectives, this study extends the literature on the link between personality and income as an indicator of objective career success by tracking income over time and by studying not only explicit but also implicit personality constructs, separately and integrated. Hypotheses on effects of explicit (Big Five traits) and implicit (Big Three motives of affiliation, power, and achievement) personality on income and income growth trajectories were tested using a growth model that tracked income over a 4-year time span ( $N = 311$  participants;  $k = 1,244$  observations). Results revealed that income had a positive linear growth trajectory over time and employees with higher scores on emotional stability and intellect had higher levels of income at the starting point of the study. Emotional stability and conscientiousness additionally predicted the slope of the trajectory over the 4-year period. Lower implicit affiliation was associated with more income growth over time and implicit personality predicted income growth beyond a model only consisting of explicit personality. Results of this study broaden our understanding of predictors of income growth and present a comprehensive overview of (explicit/implicit) personality-income relations over time. Both theoretical and practical implications are discussed.

*Keywords:* explicit traits, implicit motives, income, growth trajectories

Income is the most common and prominent indicator of objective career success, which is defined as the more observable part of accomplishments one has accumulated as a result of work experiences (Judge, Cable, Boudreau, & Bretz, 1995; Ng, Eby, Sorensen, & Feldman, 2005). Research has long been interested in predicting income and income growth trajectories based on employee characteristics, because income provides individuals with the necessary tools to invest in non-work life aspects (Hirschi, Hermann, Nagy, & Spurk, 2016) and informs organizations on which employees are most valuable to them (Bowles, Gintis, & Osborne, 2001). Early research that attempted to identify determinants of income levels focused primarily on institutional/structural factors, like career systems (Judge & Bretz, 1994) and demographic variables, like gender or age (Boudreau, Boswell, & Judge, 2001; Judge et al., 1995). During the last two decades, more attention has been given to the impact of behavioral styles and dispositional variables (de Haro, Castejón, & Gilar, 2013; Seibert & Kraimer, 2001; Sutin, Costa, Miech, & Eaton, 2009) on the way employees shape their careers. Employees' personality, for instance, might steer desirable career self-management behaviors (Lent & Brown, 2013), for which these individuals in turn can be rewarded (Turban, Moake, Wu, & Cheung, 2016).

Our research aims to extend earlier work on personality-income relations in three different ways. First, given the dynamic nature of careers, we follow recent calls to study employees' income growth trajectories (Nieß & Zacher, 2015; Sutin et al., 2009). Indeed, personality-income relations have typically used cross-sectional designs or designs with only two measurement occasions (Boudreau et al., 2001; Bozionelos, 2004; Furnham & Cheng, 2013; Nyhus & Pons, 2005), thereby neglecting its dynamic nature (Arthur, Khapova, & Wilderom, 2005). Considering the dynamic nature of personality-job performance relations (Ployhart & Hakel, 1998), we urge that also personality-income relations should be tracked with *growth models* (Bliese & Ployhart, 2002).

Second, we further extend previous research on personality-income relations by studying both explicit and implicit personality<sup>1</sup> constructs as predictors of income growth. Typically, only effects

of explicit personality traits have been studied, which are defined as “people’s stylistic and habitual patterns of cognition, affect, and behavior” (Emmons, 1989, p. 32). However, several researchers argued that personality is not only explicit but also implicit in nature (Brunstein & Maier, 2005; Winter, John, Stewart, Klohnen, & Duncan, 1998) with implicit motives as some of the most investigated implicit personality constructs. Implicit motives are described as affective preferences that are aimed at the attainment of specific classes of incentives (McClelland, Koestner, & Weinberger, 1989; Schultheiss, 2008). Authors continue calling for more studies investigating effects of implicit motives on work-related outcomes as such motives might be especially effective in predicting behavioral trends over time, among which career success (Dietl, Meurs, & Blickle, 2017).

Our third aim is to study how an integrated model of explicit traits and implicit motives might affect income growth trajectories. Earlier studies lack an integrative perspective on personality as an antecedent of work behavior (Bing, LeBreton, Davison, Migetz, & James, 2007; Kanfer, 2009; McAdams, 1995; Winter et al., 1998). An integration of distinct personality constructs, like explicit traits and implicit motives, is more likely to capture the complexity of behavior (Bing et al., 2007; Lang, Zettler, Ewen, & Hülshager, 2012), and might be especially important for predicting dynamic concepts such as career success and income growth. That is, whether people are able to achieve career success over time is often determined by an interplay of decisions and behaviors during one’s career (Ng et al., 2005) and both explicit traits and implicit motives could affect these interactions.

Taken together, the general aim of this study is to advance literature on career success by testing a dynamic income growth model on workers’ explicit/implicit personality. We specifically aim to investigate (1) changes in individuals’ income over time, (2) whether explicit traits and implicit motives account for variability in individuals’ income over time, and (3) whether the integration of explicit and implicit personality adds value in predicting income growth trajectories. Unique to this study is the integration of two distinct personality constructs to predict income growth trajectories, which –to the best of our knowledge– has not been considered yet.

## **Theoretical Background**

### **Income Growth Trajectories**

When studying career success –and income in particular–, a temporal perspective more comprehensively and realistically captures the phenomenon because careers and income levels are unfolding processes over time (Judge & Hurst, 2008). When income is considered, it is further assumed that people differ in their overall income trajectory, which is a precondition for studying individual differences in growth trajectories. Individuals might have different starting points and/or might have different trajectories over time (Judge, Klinger, & Simon, 2010; Thoresen, Bradley, Bliese, & Thoresen, 2004). A crucial factor in Western European countries underlying salary is employees' age (Kuijpers, Schyns, & Scheerens, 2006), which offers older persons generally a higher status in organizations and rewards them with higher wages through work experience. However, considerable variance in salary trajectories has been left unexplained by only studying structural/institutional variables and recent research shifted attention towards ways in which individuals are able to take their careers into their own hands (Sturges, Conway, & Liefooghe, 2010). Career self-management (CSM) describes career strategies that increase the probability to achieve career goals, like objective career success (Noe, 1996). A first way to achieve objective career success is through strategies of networking, self-promotion, negotiating, and seeking guidance/mentoring, which all reflect the use of social interactions and networks as a way of creating visibility and influencing career possibilities (King, 2001; Sturges et al., 2010). Second, strategic investments in human capital (through training, education, and feedback seeking behavior) may further affect one's job performance, which in turn can influence objective career success (King, 2004; Sturges et al., 2010). Finally, mobility-oriented behavior (i.e., making plans to leave the organization, collecting information about possible career opportunities) is a third career strategy that might affect employees' objective career success (Sturges et al., 2010).

Personality has been suggested to be a proximal antecedent of these adaptive career behaviors

that might influence one's career success (Lent & Brown, 2013; Turban et al., 2016) and therefore may underlie variability in employees' income growth trajectories. Thus, by studying the dynamic character of personality-income relations, insight is gained on how employees could self-manage their career over time. In the next paragraph we first discuss explicit traits and implicit motives, being two basic components of one's personality. Then we discuss their relation with both income levels at the starting point of the study (looking at the intercept in our data analyses) and income growth trajectories (looking at the slope), following the structure of Thoresen et al. (2004) (see Method section for a more detailed explanation on intercepts and slopes). Last, we investigate the integration of explicit traits and implicit motives in predicting income and income growth trajectories.

### **Explicit and Implicit Personality: Traits and Motives**

It has long been recognized that individuals' personality is both explicit and implicit in nature (Brunstein & Maier, 2005; Winter et al., 1998). Explicit personality has typically been operationalized with explicit traits (like the Big Five model), whereas implicit personality has been associated with the concept of implicit motives (like the Big Three of motives; see Lang et al., 2012; Winter et al., 1998). This classification is rooted in the respective traits research tradition founded by Gordon Allport (1937) and the implicit motive research tradition grounded in work of Henry Murray (1938) and David McClelland (1980). Explicit traits "are capturing 'typical behavior' or people's stylistic and habitual patterns of cognition, affect, and behavior" (Emmons, 1989, p. 32), and hence are considered to explain considerable consistency in a person's behavior (Allport, 1937). These traits are mostly measured using self-or peer-report questionnaires because of people's self-awareness and competency in reporting their explicit traits (Winter et al., 1998). An explicit personality model describing the most universal traits and holding the strongest structural validity and comprehensiveness is the *Big Five Model* (Goldberg, 1981), consisting of the traits *extraversion*, *conscientiousness*, *emotional stability*, *intellect*, and *agreeableness*. *Extraversion* is defined as being

warm, outgoing, energetic, and ambitious (Barrick & Mount, 1991). *Conscientiousness* is a trait that describes people as being responsible, persistent, organized, and hardworking (Barrick & Mount, 1991). *Emotional stability* represents the tendency to be relaxed, calm, and independent (Nyhus & Pons, 2005). *Intellect* is referred to as the extent to which people are imaginative, unconventional, flexible, and intellectually oriented (Ng et al., 2005). Last, *agreeableness* is illustrated by being cooperative, trusting, and caring (Barrick & Mount, 1991). There is extensive empirical research suggesting that explicitly measured traits (like those from the Big Five) exhibit long-term stability over time (Roberts & DelVecchio, 2000) and across situations (Donnellan, Lucas, & Fleeson, 2009).

Implicit motives (Murray, 1938), on the other hand, are viewed as affective preferences related to one's fundamental wishes and desires (Winter et al., 1998)<sup>2</sup>, that are aimed at the attainment of specific classes of incentives and the avoidance of specific classes of disincentives (McClelland et al., 1989; Schultheiss, 2008). Because implicit motives are largely inaccessible to introspection, they are traditionally measured indirectly, often by means of tests with free response format (like the thematic apperception test; Morgan & Murray, 1935). Research on implicit motives has mainly focused on the Big Three of motives, which entail the three important common human wishes and desires (Winter, 1987), namely *affiliation*, *achievement*, and *power motives*. The *implicit affiliation motive* consists of a tendency towards warm, friendly relations (Delbecq, House, de Luque, & Quigley, 2013) and a deep desire for acceptance and love (Schultheiss, 2008). The *implicit achievement motive* refers to a concern with excellence or a striving for unique accomplishments. Finally, the *implicit power motive* refers to a concern with having impact and authority or exerting influence on others' actions or emotions (Delbecq et al., 2013). In the earlier years of implicit motive measurements, test-retest correlations were typically low, suggesting a rather weak stability over time (like with the thematic apperception test; Entwisle, 1972). Yet, a meta-analysis based on new generations of motive measures (such as the Operant Motive Test; Kuhl & Scheffer, 1999), revealed test-retest correlations similar to test-retest values observed for trait measures (Roberts &

DelVecchio, 2000; Schultheiss & Pang, 2007). Hence, much like explicit traits, implicit motives have also been considered to be dispositionally stable (Winter et al., 1998).

**Traits, motives, and income levels at the starting point of the study (intercept).** Several studies already related explicit traits with income levels. First, previous research points to *extraversion* as a factor positively influencing income (de Haro et al., 2013; Turban et al., 2016). Extraverted individuals are better at self-promotion (Costa & McCrae, 1992), are often active in joining organizational networks and thus create more visibility (Rode, Arthaud-Day, Mooney, Near, & Baldwin, 2008). Second, regarding *conscientiousness*, a majority of studies indicate positive relations with employees' salary levels (Ng et al., 2005; Roberts, Jackson, Duckworth, & Von Culin, 2011), due to the facet of achievement orientation (Judge, Higgins, Thoresen, & Barrick, 1999). Conscientious individuals might be appreciated promptly because their propensity to be organized helps them manage their work quicker when entering new work environments (Costa & McCrae, 1992). Third, *emotional stability* seemed to be the explicit trait that has been most consistently linked to variance in success at work, measured by promotions and pay level (Furnham & Cheng, 2013; Mueller & Plug, 2006; Nyhus & Pons, 2005; Roberts et al., 2011). Due to their higher levels of self-confidence and lower levels of anxiety and nervousness, emotionally stable individuals may be more apt to mobility-oriented behavior, leading to higher earnings (Nieß & Zacher, 2015). Lower emotional stability also leads to lower visibility in organizations because insecurity or negative affect will potentially reduce career sponsorship (Ng et al., 2005). Fourth, *intellect* was found to be weakly and positively related to salary levels (Ng et al., 2005; Roberts et al., 2011). People with higher scores on intellect often collect more complete career information because of levels of intellectual orientation (Judge et al., 1999). In addition, they seek intellectual stimulation in their jobs through training, education, or by applying for more challenging jobs, often on higher hierarchical levels (Roberts et al., 2011). Due to their search for novelty and new experiences, highly intellect individuals are more prone to job hopping and experience more voluntary job transitions than others



(Wille, De Fruyt, & Feys, 2010), which leads to more negotiating opportunities for higher wages (Perez & Sanz, 2005). Finally, studies regarding *agreeableness* have indicated that this trait is negatively related to income and earnings (Judge, Livingston, & Hurst, 2012; Ng et al., 2005; Roberts et al., 2011). Highly agreeable individuals may not be sufficiently aggressive or lack assertiveness in the salary negotiating process (Roberts et al., 2011) and may receive less sponsorship as a result of being regarded as docile or easily manipulated (Ng et al., 2005). Given previous findings on the relation of explicit traits with income levels, we posit that:

*Hypothesis 1:* Big Five traits will predict income levels at the starting point of the study (intercept) such that higher scores on extraversion (H1a), conscientiousness (H1b), emotional stability (H1c), and intellect (H1d), and lower scores on agreeableness (H1e) are associated with higher initial income levels.

Compared to explicit traits, remarkably fewer studies considered relations of implicit motives with employees' income levels. First and although high *implicit affiliation* can have a positive effect in certain specific situations (e.g., it positively predicts task performance when combined with higher scores on extraversion; Lang et al., 2012), we assume that higher scores on implicit affiliation will likely lead to lower wages. The reason for this is that people higher in the implicit affiliation motive are less likely to negotiate wage-related concerns because of their tendency to avoid conflict and their difficulties with delivering feedback (Delbecq et al., 2013). Moreover, because high affiliation-oriented people focus more on a few deep relationships with others, they might be less likely to build large networks and are more willing to settle in their current position or environment to avoid rejection and exclusion (Delbecq et al., 2013). Indeed, high affiliation-oriented people might be more averse to severing the ties with their employers, which would lead them to work for lower wages (Masakure, 2016). As a contrast, low affiliation-oriented people care less about popularity or being liked and should be less pre-occupied to ask and negotiate for higher wages or to change environments (McClelland, 1980). Second, individuals with higher *implicit achievement* have a need

to demonstrate personal competence (McClelland, 1980). Because some studies already linked higher scores on implicit achievement to higher salaries (Cummin, 1967; Seibert & Kraimer, 2001), we also expect the implicit achievement motive to be positively related to income. Specifically, people high in the implicit achievement motive prefer work settings in which they can ask for frequent feedback on their performance levels, in order to optimize their performance (Steinmann, Ötting, & Maier, 2016). Finally, a few studies also suggested *implicit power* to be positively related to objective career success and income levels (Cummin, 1967; Steinmann, Dörr, Schultheiss, & Maier, 2015). Highly power-oriented people might be better at negotiating salaries because of a large focus on status, elevated levels of confidence, and higher likelihood of using manipulative behaviors (Trapp & Kehr, 2016). Implicit power motive is also linked to networking behaviors and employees' increased visibility in organizations (Steinmann et al., 2016), which has been related to higher income levels. Based on the above-mentioned literature on implicit motives, we hypothesized:

*Hypothesis 2:* Implicit motives will predict income levels at the starting point of the study (intercept) such that lower scores on affiliation motive (H2a), and higher scores on achievement motive (H2b), and on power motive (H2c) are associated with higher initial income levels.

**Traits, motives, and income growth trajectories (slope).** Research that has linked personality to income growth is scarce too. Judge and Kammeyer-Mueller (2007) are one of the few that established a positive relationship between *extraversion* and income growth (see also: Rode et al., 2008; Seibert & Kraimer, 2001). It seems that extraverted people build larger networks and make more use of these social ties over time (Wolff & Moser, 2009). Extraversion is also regarded as a predictor of job performance (Barrick & Mount, 1991), especially in jobs requiring social interactions. As a consequence, extraverted people might have more occasions to be rewarded. Second, *conscientious* people might also receive higher salaries due to the relatedness of conscientiousness with higher job performance criteria and self-improvement (Barrick & Mount,

1991). Indeed, conscientiousness contributes to higher levels of information processing (Rode et al., 2008) which can be rewarded with higher salaries. Third, because emotional instability and anxiety are typically related to lower levels of self-development, emotional unstable employees might have a lower chance of being rewarded for increased human capital (Seibert & Kraimer, 2001). Estimated during childhood, *emotional stability* predicted higher earnings in adulthood (Sutin et al., 2009). Fourth, also the associations between *intellect* and earnings seem to be positive over time (Judge et al., 1999). Indeed, one's intellectual orientation may instigate higher levels of self-development and continuous improvement (Nieß & Zacher, 2015), which in turn might affect one's level of income. Finally and to the best of our knowledge, no previous relationships between *agreeableness* and income growth have been investigated. However, because higher agreeableness has been associated with lower levels of assertiveness, sponsorship, and visibility in organizations (Ng et al., 2005), one can assume that lower agreeableness will be positively related to income growth. The following hypothesis is posited:

*Hypothesis 3:* Big Five traits will predict positive growth in income (slope) such that higher scores on extraversion (H3a), conscientiousness (H3b), emotional stability (H3c), and intellect (H3d), and lower scores on agreeableness (H3e) are associated with higher positive growth in income.

Regarding implicit motives, to the best of our knowledge, no previous studies have ever linked *the implicit affiliation motive* to income growth. Based on findings that affiliation-oriented individuals are less likely to build large networks and often settle in their current environment (Delbecq et al., 2013), we also expect them to experience fewer voluntary job-mobility behavior. As a consequence, affiliation-oriented employees might have less opportunities to move up in the wage structure over time (Perez & Sanz, 2005). Second, research did show, however, a positive relation of *the implicit achievement motive* with income as measured over a five- (McClelland & Franz, 1992; Orpen, 1983) and six-year period after the achievement motive was measured (Zhang & Arvey,

2009). Behavioral correlates of this motive include development and improvement of skills (Steinmann et al., 2016). Although these effects may take some time to occur, being oriented towards performance standards and development or learning (both aspects of the achievement motive) has been proven to lead to more career success over time (Maurer & Chapman, 2013). Finally, in previous studies, *the implicit power motive* has already been linked to leadership positions and leadership success (House, Spangler, & Woycke, 1991; McClelland & Boyatzis, 1982). In general, people higher on the implicit power motive not only aim at leadership positions but are also more likely to move up the promotional ladder. As a consequence, people high in implicit power should obtain higher levels of earnings over a period of time. Building on previous study findings, we therefore hypothesized:

*Hypothesis 4:* Implicit motives will predict positive growth in income (slope) such that lower scores on affiliation motive (H4a), and higher scores on achievement motive (H4b) and on power motive (H4c) are associated with higher positive growth in income.

**Integrating Explicit Traits and Implicit Motives.** Up to this point, we discussed separate effects of explicit traits and implicit motives on employees' objective career success (like growth in income levels). However, following previous calls to integrate different personality-describing theories into a comprehensive personality framework, it might be worthwhile to investigate not only effects of explicit traits or implicit motives on income separately, but also the added effects of motives beyond traits (Bing et al., 2007; Kanfer, 2009; McAdams, 1995; Winter et al., 1998). Hence, by integrating explicit and implicit perspectives on personality, a more complete picture of an individual's personality becomes apparent such that the understanding and the predictive value of constructs might be enlarged (Bing et al., 2007; Kanfer, 2009; McAdams, 1995; Winter et al., 1998). Although theories on explicit traits and implicit motives are both aimed at describing individual differences between people, both constructs are considered theoretically and empirically distinct (Bing et al., 2007). They differ from each other in developmental history, arousal-enhancing

incentives, and the kind of behavior that they trigger (McClelland et al., 1989; Schultheiss, 2008; Winter et al., 1998). Specifically, explicit traits are established somewhat later in life on the basis of cognitive experiences, get aroused by social-extrinsic incentives, and predict immediate, deliberate, and specific responses to situations. Implicit motives, on the other hand, are rather built on early, pre-linguistic affective experiences, get triggered by activity-intrinsic incentives, and predict spontaneous behavioral trends over time (Brunstein & Maier, 2005; McClelland et al., 1989; Schultheiss, 2008; Sheldon & Schöler, 2011). As a consequence, both explicit traits and implicit motives might have unique predictive validity in estimating income and income growth and adding implicit motives to explicit traits might explain incremental variance in the criterion measure. Because earlier work-related research typically focused on the effects of explicit traits and rarely tested the predictive value of implicit motives (Kanfer, 2009), we specifically investigated the added value of implicit motives over explicit traits, and thus formulated the following hypothesis:

*Hypothesis 5:* Implicit motives explain incremental variance in income levels at the starting point of the study (H5a) as well as in income growth trajectories (H5b) beyond that explained by explicit traits.

## **Method**

### **Participants**

Respondents were part of a representative sample of the Dutch population that participated in the Longitudinal Internet Study for the Social Sciences (LISS) panel study. We used a specific subset of the LISS, in which implicit motives were questioned and which started collecting data during a time span ranging from September 2010 until December 2014. A total of 2,400 participants took part in the original panel study. Since the required information for this specific study (i.e., explicit traits, implicit motives, gender, age, and income data) was all administered at different time points, we first had to determine which participants had completed all necessary questionnaires for this study. Respondents with incomplete data on their explicit traits/implicit motives/income data or parts of

these questionnaires were first excluded from the sample. This approach reduced the initial number of 2,400 participants to 386 respondents. In addition, because the scope of this study was to determine predictors of income and income growth based on a career perspective, we only identified participants who belonged to the active labor force during the study period (i.e., excluding retirees, students,...). This process further reduced the sample to the final number of  $N = 311$ . At the starting point, final respondents in this study (148 male, 163 female) were between 18 and 68 years old ( $M = 45.57$ ,  $SD = 11.70$ ), 50.3% ( $N = 158$ ) had a degree of higher education, while 34.3% ( $N = 107$ ) owned a degree of secondary education and 13.8% ( $N = 43$ ) obtained the degree of intermediate secondary education. Sectors the participants most frequently worked in were healthcare and welfare (20.9%;  $N = 65$ ), government services/public administration (10%;  $N = 31$ ), and education (9%;  $N = 28$ ).

## **Procedure**

Independent variables of this study were explicit traits and implicit motives. Dependent variable was income, followed over several years. The data were obtained from the LISS panel, which is a publicly available archival dataset that aims to follow changes in the life course and living conditions of its panel members. The LISS panel uses true probability sampling of households drawn from the population register by Statistics Netherlands (more detailed information on sampling can be found on the website of the LISS panel study). In the LISS panel, participants had to complete online questionnaires on a variety of topics on a monthly basis. Questionnaires on demographic variables (including income levels, gender, and age), explicit traits, and implicit motives were distributed to respondents. Implicit motives were added to the panel study from September/October 2010 on, explicit traits in May 2011, and demographic variables were measured monthly from September 2010 until December 2014. Since explicit traits were only administered in May 2011 and the dependent variable (i.e., income) should not be measured prior to the administration of independent variables (i.e., traits and motives) (Field, 2009), we chose to use September 2011 as a first unit of

income data, hence reducing the initial time span of the original panel to a 4-year time period of data for this specific study. For demographics however, we consider September 2010 as the starting point of the data collection.

## Measures

**Explicit traits.** Traits were measured using the 50-item International Personality Item Pool (IPIP; Goldberg, 1992) Big Five personality questionnaire. Participants responded on a scale ranging from 1 (*very inaccurate*) to 5 (*very accurate*). The Cronbach alpha's were .86 for extraversion, .80 for agreeableness, .80 for conscientiousness, .89 for emotional stability, and .81 for intellect, respectively.

**Implicit motive measurement and coding.** Implicit motives were measured with the Operant Motive Test (OMT; Kuhl & Scheffer, 1999). Respondents of the panel had to answer three questions about 12 ambiguous pictures showing one or more persons: "What is important for this person and what is this person doing?", "How does the person feel?", and "Why does the person feel this way?". Based on the coding manual (Kuhl & Scheffer, 1999), answers were then categorized in three main motive categories –affiliation (Aff), achievement (Ach), or power (Pow)– and could further be assigned to five categories per motive off which three categories per motive were relevant to our study (for a similar example, see Lang et al., 2012). Specifically, we merely focused on the three motive approach categories. The first approach category incorporates answers that refer to an intrinsic aspect of the motive. The second approach category contains answers with positive affect that are considered to be non-intrinsic. The third approach category includes negative affect answers that are turned into a positive result by active coping and self-confrontation. For each main motive (affiliation, achievement, or power), we summed up the responses of the three motive approach categories. Two trained coders coded the OMT stories of 311 participants. In addition, the first expert coder also coded 50 OMT stories that belonged to the second coder, in order to check interrater reliability. Intra-class correlation coefficient (ICC[3,1]) was .79.

**Control variables.** Gender and age were used as control variables in all estimated models (both models regarding the effects of traits and motives and both for intercept and slope models). Gender and age seem to be related to the prediction of income levels and income growth (Kuijpers et al., 2006; Ng et al., 2005; Rode et al., 2008) and gender and age can also be related to income levels through interactions with traits (Judge et al., 2012). In addition, implicit motives can be based on different developmental and hormonal aspects in men and women (Schultheiss, Wirth, Torges, Pang, Villacorta, & Welsh, 2005), indicating the need to control for these variables.

**Income.** Following Furnham and Cheng (2013), we performed analyses on the monthly net income levels of participants. Net income (in Euro) was questioned monthly and was aggregated for each year. September 2011 was the first data-point of income levels in our study, followed by data collection moments in September 2012, September 2013, and September 2014. Hence, four data points of income were gathered for each panel member, to test our hypotheses using *latent growth curve modelling* (LCM).

## Data Analyses

Using Mplus (Version 7.4), we tested latent growth curve models (LCM)<sup>3</sup> examining the nature of relationships between participants' explicit traits (Big Five), implicit motives (Big Three), and income, both at the starting point of the study (i.e., intercept) and at income growth trajectories (i.e., slope). LCMs are a specific type of *structural equation models* that estimate the intercept and slope on the basis of multiple measurements of the same variable by specifying one latent variable for the intercept with loadings fixed to 1 and one latent variable for the slope with a fixed coefficient that increases by 1 with each measurement occasion. Basic regression frameworks usually start by assuming that all participants start at a similar point and change at the same rate (i.e., fixed-effects model). A LCM framework adds random-effects terms, which allow the individuals to vary in their starting point (i.e., intercept  $\pi_{0j}$  in Equation 1) and change rates (i.e., slope  $\pi_{1j}$  in Equation 1) from the



average intercept and slope in the sample (Bliese & Ployhart, 2002). The model can thus be written as (see Equation 1):

$$Y_{ij} = [\pi_{0j} + \pi_{1j}(\text{Time}_{ij})] + r_{ij} \quad (1)$$

$$\pi_{0j} = \beta_{00} + u_{0j}$$

$$\pi_{1j} = \beta_{10} + u_{1j}$$

Building a LCM model typically consists of two steps (Curran, Obeidat, & Losardo, 2010)<sup>4</sup>.

The first step included constructing a basic growth model without any between-person predictor variables (Model M0). In this baseline model, the trajectory of income change over time was studied. The model included both fixed effects (i.e., estimates of the mean intercept and mean slope in the sample, referring to the average starting point of the growth curve and the average growth rate over individuals) as well as random effects (i.e., estimates of intercept and slope variance, referring to between-person variability around the mean intercept and mean slope).

In the second step (Model M1), between-person predictor variables (i.e., gender, age, traits, and motives) were introduced to predict individual variability in income at the starting point (i.e., intercept), and in income change rate (i.e., slope) (Byrne & Crombie, 2003). Several models, with different predictor variables, were tested. In Model 1a (M1a), control variables and explicit traits were entered as between-person predictor variables of the intercept and slope, to test for Hypotheses 1 and 3. In Model 1b (M1b) control variables and implicit motives predicted the intercept and slope, allowing to test Hypotheses 2 and 4. Control variables, explicit traits, and implicit motives were then entered simultaneously in Model 1c (M1c; full model) as predictors, in order to test H5. Model fit of all estimated models was evaluated using fit indices such as Normed  $\chi^2$ , RMSEA (Root mean squared error of approximation), CFI (comparative fit index), SRMR (standardized root mean square residual), TLI (Tucker-Lewin index), and AIC (Akaike information criterion)<sup>5</sup>. Taking Model 1c (M1c) as an example, Equation 1 could be further extended with between-person predictor variables of the intercept (see Equation 2) and the slope (see Equation 3):

$$\pi_{0j} = \beta_{00} + \beta_{01}(\text{Gender}_j) + \beta_{02}(\text{Age}_j) + \beta_{03}(\text{Extraversion}_j) + \beta_{04}(\text{Agreeableness}_j) + \beta_{05}(\text{Conscientiousness}_j) + \beta_{06}(\text{Emotional Stability}_j) + \beta_{07}(\text{Intellect}_j) +$$

$$\beta_{08}(\text{Affiliation}_j) + \beta_{09}(\text{Achievement}_j) + \beta_{010}(\text{Power}_j) + u_{0j}$$

$$\pi_{1j} = \beta_{10} + \beta_{11}(\text{Gender}_j) + \beta_{12}(\text{Age}_j) + \beta_{13}(\text{Extraversion}_j) + \beta_{14}(\text{Agreeableness}_j) + \beta_{15}(\text{Conscientiousness}_j) + \beta_{16}(\text{Emotional Stability}_j) + \beta_{17}(\text{Intellect}_j) +$$

$$\beta_{18}(\text{Affiliation}_j) + \beta_{19}(\text{Achievement}_j) + \beta_{110}(\text{Power}_j) + u_{1j}$$

In Figure 1, a figure of the conceptual full model (M1c) of this study can be found.

[Figure 1 about here]

## Results

### Preliminary Analyses

Table 1 provides descriptives (i.e., raw means and standard deviations) as well as intercorrelations of study variables for the four income time points.

Results of the preliminary analyses (i.e., Step 1 of the LCM model building approach; Model M0) revealed a positive, linear trend in income levels across the four time indicators (4 years). Mean intercept (i.e., referring to the average income level at the starting point of the study) was  $b = 1,823.81$ ,  $t(932) = 36.59$ ,  $p < .001$  and mean slope (i.e., referring to the average rate of income growth over one year) was  $b = 18.35$ ,  $t(932) = 2.31$ ,  $p = .02$ . Intercept variance ( $\sigma^2_{\text{intercept}} = 753,166.05$ ) and slope variance ( $\sigma^2_{\text{slope}} = 13,427.96$ ) were substantial with greater individual differences around the mean intercept compared to the individual variability around the mean slope. Furthermore, intercept and slope were not that highly correlated ( $r = -.14$ ), indicating that income level at the starting point of the study was not highly related to change in income over time. Model M0 also showed an acceptable fit to the data (Normed  $\chi^2 = 7.75$ ; RMSEA = 0.15; CFI = 0.98; SRMR = 0.02; TLI = 0.98; AIC = 18,331.09).

### Hypotheses Testing

Table 2 presents the LCM results for models that included the predictor variables (see M1a, M1b, and M1c) and is based upon Step 2 of the LCM model building approach (Model M1), which allowed for the testing of our hypotheses by estimating models with between-person predictors of the intercept and slope. As can also be seen from Table 2, the full model (M1c) provided an acceptable to good fit to the data.

[Tables 1 and 2 about here]

Significant predictors of intercept variability (M1a) were emotional stability and intellect. Effects of these explicit traits were positive, meaning that higher levels of these traits led to higher intercept. Hence, people higher in emotional stability and intellect had higher income levels at the starting point of the study (H1c and H1d supported). Additionally, conscientiousness and emotional stability were significant positive predictors of slope variability (M1a), meaning that higher levels of conscientiousness and emotional stability led to steeper positive growth in income over the years, supporting H3b and H3c. Figure 2a further shows the impact of conscientiousness on income over the years and Figure 2b depicts the effects of emotional stability with one *SD* above the mean representing higher levels and one *SD* below the mean representing lower levels on these traits. Furthermore, lower levels of the affiliation motive led to higher growth in income over the years (M1b), which provided support for H4a (see Figure 2c).

Finally, Hypothesis 5 investigated whether adding implicit motives –hence, studying the integration of both implicit and explicit personality constructs–, explained incremental variance in income levels and income growth trajectories beyond that explained by explicit traits only. When all predictors were included together in the model (M1c), emotional stability and intellect still significantly predicted income levels at the starting point of the study. Moreover, conscientiousness, emotional stability, and affiliation motive were still significant predictors of slope variability. Additionally,  $R^2$  values (Table 2) were calculated. Results for the integrated model (M1c) including control variables, explicit traits, and implicit motives suggested that implicit motives explained

incremental variance in the income growth slope,  $\Delta R^2 = .05$ ;  $\chi^2(3) = 10.37$ ,  $p = .02$ , beyond a model only consisting of control variables and explicit traits (M1a), which is in line with H5b. Furthermore, the integrated model (M1c) provided an overall better fit to the data than the model with control variables and explicit traits (M1a),  $\chi^2(6) = 14.68$ ,  $p = .02$ , and the model with control variables and implicit motives (M1b),  $\chi^2(10) = 35.60$ ,  $p < .001$ . An overview of the estimated models, the hypotheses they correspond to, and the subsequent results is presented in Table 3.

[Table 3 about here]

[Figures 2a-c about here]

### Discussion

The general aim of this study was to advance literature on career success by considering the complex interplay of explicit traits and implicit motives on the prediction of income levels and income growth trajectories. We drew upon career self-management perspectives (King, 2001; 2004; Sturges et al., 2010) to argue that certain (explicit/implicit) personality characteristics are considered as proximal antecedents of adaptive career behaviors (Lent & Brown, 2013), which in turn could affect income levels. We specifically investigated whether people with certain personality characteristics achieved higher levels of income at the starting point of the study (intercept) and/or through growth trajectories over time (slope) (Judge et al., 2010). To realize this aim, we related employees' stance on explicit traits and implicit motives to self-reported levels of income measured across a 4-year time span, in which levels of income were measured monthly and were aggregated for each year. Based on latent growth curve modelling analyses, we could detect that the overall trend in income growth was positive. Below, we first discuss the relationship of explicit traits (Big Five) and implicit motives (Big Three) with income levels (both intercept and slope). We also elaborate on the integrated effects of explicit traits and implicit motives to address recent calls from Bing et al. (2007) and Kanfer (2009) to move towards a more integrative approach. Thereafter,

strengths, limitations, further research opportunities, and both theoretical contributions and practical implications are discussed.

### **Explicit Traits and Income Levels**

No support was found for H1a and H3a regarding the impact of *extraversion*. Extraversion did not predict the intercept and slope of income growth trajectories, despite previous results linking extraversion to higher income levels (de Haro et al., 2013; Turban et al., 2016) and income growth (Judge & Kammeyer-Mueller, 2007; Rode et al., 2008; Seibert & Kraimer, 2001). At first sight, these findings seem surprising given that extraverts are considered to be active in engaging in social opportunities (Rode et al., 2008) like mentoring relationships and networking (Bozionelos, 2004), and given that extraversion is linked to higher job performance evaluations. Still, these earlier results mostly linked extraversion to job performance in social occupations (Barrick & Mount, 1991).

Second and as expected, *conscientiousness* predicted the slope of the income growth trajectories (H3b supported), such that higher scores on conscientiousness ended in steeper positive income growth. On the contrary, no support was perceived for effects of conscientiousness on the intercept (H1b unsupported). These results meet prior research of Wiersma and Kappe (2016), who noticed that conscientiousness was unrelated to salary at the starting point of the study but significantly so to salary growth. Individuals who score higher on conscientiousness are more likely to advance in their income because of superior job performance (Bozionelos, 2004). Indeed, conscientiousness is the most consistent dimension of personality in relation with all job performance criteria and all occupational jobs (Barrick & Mount, 1991).

Besides conscientiousness, nearly all studies on the prediction of objective careers show that *emotional stability* can also be regarded as important in explaining variance of success at work (Sutin et al., 2009) because these two personality traits are valid predictors of job performance across job criteria and occupational groups (Salgado, 1997). Results of this study support these previous findings. As expected, emotional stability predicted both the intercept and slope of the income

growth trajectories (H1c and H3c supported), such that higher scores on the emotional stability trait resulted in higher income levels at the starting point of the study and steeper positive growth in income over time. Typically, emotionally stable individuals have higher chances of career sponsorship (Ng et al., 2005) and are more likely to form professional networks (Bozionelos, 2004). In addition, emotionally stable individuals might also be perceived as more successful when entering new environments, hence increasing attraction of mentors because they should be quicker in adjusting to the ambiguity of a new context (Rode et al., 2008). Stability and self-confidence increase chances of self-development through training and education, for which emotionally stable individuals could be rewarded over time (Ng et al., 2005; Seibert & Kraimer, 2001).

Fourth, higher scores on *intellect* resulted in higher intercept of the income growth trajectories (H1d supported), but not in steeper positive income growth (H3d unsupported). Highly intellect individuals might engage in diverse social interactions at work, from which they can create more visibility (Wolff & Moser, 2009). In addition, higher intellect is related to intellectual and social orientation, and to flexibility (Barrick & Mount, 1991; Judge et al., 1999), which all could be considered as eligible attributes. No support was found for the impact of intellect on the slope of the income growth trajectories (H3d unsupported), perhaps because intellect (as a personality characteristic) is not clearly linked to job performance except for jobs that require creativity (Ng et al., 2005).

Finally, hypotheses regarding effects of *agreeableness* were not supported (H1e and H3e unsupported). Previous studies have shown that agreeableness is less observable by others (Funder, 2001) and might thus not be easily detected as a preferable trait, in order to receive sponsorship (Ng et al., 2005). In addition, agreeableness does not relate to job performance across job criteria and occupational groups (Salgado, 1997).

### **Implicit Traits and Income Levels**

Besides studying explicit traits, we additionally looked at implicit motives. Since implicit motives are perceived as being effective in predicting trends over time (McClelland et al., 1989), they might be especially informative to predict career success. As expected, *the affiliation motive* predicted the slope of the income growth trajectories (H4a supported) which entails that the affiliation motive would impact income growth over time. In particular, lower scores on affiliation motive resulted in higher growth in income over time. In general, individuals lower in affiliation motive do not worry about harmonious relationships, interpersonal rejection or hurting one's feelings in conflicts (Weinberger, Cotler, & Fishman, 2010). As a consequence, they might be less loyal to employers, less averse to severing the ties with the organization or less likely to settle in (Steinmann et al., 2016). Previous research indicated that loyalty (Masakure, 2016) and job embeddedness (Stumpf, 2014) had negative influences on career success as well and that voluntary job mobility increased chances of moving up in the wage structure (Perez & Sanz, 2005).

No significant effects, however, were found for the predictors *achievement* and *power motives* on the intercept (H2b and H2c unsupported) and slope (H4b and H4c unsupported) of the income growth trajectories and this can be explained in different ways. First, implicit power and achievement motives might be more fruitful in certain occupations. These two personality elements do not contribute towards explaining income levels at the starting point of our study nor to growth in income over time, maybe because effects of these motives are occupation-specific (Nyhus & Pons, 2005). Specifically, striving for impact and authority (i.e., power motive) might be more relevant in leadership (House et al., 1991) or teaching positions (Winter, 1987). The achievement motive might be more successful in small-scale businesses, sales, or entrepreneurial jobs (McClelland, 1980) especially because individuals higher in achievement motive like innovative activities that involve planning the future (Steinmann et al., 2016). In addition, implicit achievement and power motives might be less related to income levels, but more to other indicators of objective career success, such as promotions or occupational status. For example implicit achievement motive has been related to

occupational reputation (Dietl et al., 2017) and implicit power motive to promotions into managerial levels (McClelland & Boyatzis, 1982).

### **Integrated Effects of Explicit and Implicit Personality**

Finally, the results on the fifth hypothesis (H5) regarding the integrated effects of explicit traits and implicit motives showed that a model in which implicit motives were added to explicit traits (M1c) explained incremental variance in the income growth slope (H5b supported), but not in the intercept (H5a unsupported), compared to a model only consisting of control variables and explicit traits (M1a). Literature states that both explicit and implicit personality elements are independent and theoretically distinct (Bing et al., 2007) and therefore provide complementary information, especially since explicit traits mostly predict deliberate responses to situations, while implicit motives mainly predict spontaneous trends over time (Brunstein & Maier, 2005; McClelland et al., 1989; Sheldon & Schöler, 2011; Schultheiss, 2008). Lang et al. (2012), for instance, found that interactions between explicit traits and implicit motives increased the explained variance in both task and contextual performance. Present findings also illustrate the need for models that consider integrated effects of both explicit and implicit elements of personality (Kanfer, 2009; McAdams, 1995).

### **Strengths, Limitations, and Research Opportunities**

When evaluating results, it is important to consider the strengths and limitations of this study. First, the study's most valuable strength is the use of longitudinal data, which allows us to consider growth trajectories of income. Consequently, argumentation regarding causality can be made. However, we cannot rule out reverse causality (i.e., higher income could lead individuals to changes in personality by adapting to a new context). On the other hand, several studies have indicated that (explicit/implicit) personality is relatively stable over time, suggesting that the causal direction goes from personality towards career success (Staw, Bell, & Clausen, 1986). A second strength of our study refers to the utilization of a fixed dataset (i.e., LISS panel) which brings with it several



advantages like the range and the amount of people that was followed over the years. A third strength is the collection of implicit motives and the subsequent integration of explicit traits and implicit motives. Very few studies were able to study effects of both explicit traits and implicit motives together (for exceptions, see Bing et al., 2007; Lang et al., 2012; Winter et al., 1998).

Despite these strengths, a potential study limitation is that only one indicator of objective career success was studied (Judge & Hurst, 2008). Other indicators of objective career success (such as promotions or job status) would also have been interesting to relate to income growth trajectories, especially to investigate whether the Big Three of implicit motives relates differently to different markers of objective career success. Second, the panel study that was used for this research originated in a Dutch context. In particular, national contexts may have a large influence on whether or not employees' wages can be increased over time. The Netherlands (and in general more Western European countries) are characterized by a large unionized labor market (Nyhus & Pons, 2005) in which wages are largely determined by collective bargaining between employers and unions or by structural or institutional factors such as age (Kuijpers et al., 2006). As a consequence, employers may have less discretion on how to distribute earnings amongst employees (Wiersma & Kappe, 2016). Finally, the starting point of our study was somewhat arbitrary. Since our data was gathered between 2010 and 2014, different stages of individuals' careers (e.g., early versus advanced careers) were not taken into account.

Nevertheless, these limitations reveal promising avenues for future research. Fruitful ideas for prospective studies might be to investigate Big Five traits at facet level because lower level facets of traits might have differential links with income and income growth. For example, the facet of achievement orientation (as part of the conscientiousness factor) has proven to be especially related to income (Judge et al., 1999). Also, future research should establish the extent to which our conclusions are transferable to other cultural contexts. Last, prospective studies should investigate the influence of career stage, for example by focusing on the impact of (explicit/implicit) personality

on income and income growth trajectories at the start of individuals' careers. In this study, we did not aim to measure early career success. However, when growth is considered, some individuals might have different starting advantages and/or might have steeper trajectories of income growth (Judge et al., 2010). These two elements (higher starting points and steeper growth) are reflected in *sponsored mobility and contest mobility perspectives* (Rosenbaum, 1979) and future research could thus apply these mobility perspectives to the present study.

### **Theoretical Contributions**

In considering the theoretical contributions of this study, three implications to the literature become apparent. First, this study is one of only a few that longitudinally links personality to income and used latent growth curve modelling to investigate predictors of income growth trajectories. A longitudinal research design should always be used when studying dynamic concepts, like career success. Likewise, implicit motives are regarded as especially influential on long-term behavioral trends (McClelland et al., 1989), rendering them particularly appropriate to predict career success over time (Dietl et al., 2017). Second, our results broaden our understanding of predictors of income growth and present a comprehensive overview of (explicit/implicit) personality-income relations. Earlier research in this field has mostly concentrated on explicit personality, while failing to acknowledge the importance of implicit personality elements (Winter et al., 1998). Our findings demonstrate that implicit motives (i.e., affiliation motive) do have an impact on income growth trajectories and therefore add to theories on income and personality relations. Additionally, the magnitude of effects is in line with previous research on the impact of personality in organizational settings (Ones, Dilchert, Viswesvaran, & Judge, 2007). Third, models combining explicit and implicit personality elements provide added value compared to models only consisting of either explicit or implicit personality elements. Because explicit and implicit personality usually predict different ranges of behaviors (i.e., deliberate immediate reactions versus spontaneous trends over time; McClelland et al., 1989), integrating them might be especially effective when predicting a

complex and dynamic concept such as career success, that is often determined by an interplay of immediate reactions and spontaneous behaviors over time (Ng et al., 2005). This study is one of the first to consider an integration between explicit and implicit personality and can thus be used to argue that future research on the relationship between individual dispositions and success, as judged by earnings, should not only examine explicit personality, but should additionally center on implicit personality elements. This theoretical contribution answers previous calls to integrate explicit and implicit personality elements (Kanfer, 2009; McAdams, 1995).

### **Practical Implications**

The present study also offers practical implications. First, results help determining which personality characteristics get rewarded with higher income over time. These insights could subsequently help individuals manage their careers. In a study by McClelland and Winter (1969), gaining awareness of implicit motive levels as part of a motive training program resulted in higher scores of the motives measured at a second time point. These findings suggest that people can be capable of adjusting their motive levels in line with desirable personality characteristics. Later, McClelland (1985) attributed these changes in the motive scores to increased self-confidence and improved life management skills, which might additionally aid people in career self-management. Second, information is offered to organizations as to which employees could be regarded as most valuable in terms of personality. Indeed, individual success might be a prerequisite for organizational success (Judge et al., 1999). Therefore, these study findings can be used in screening and selection processes, as well as for guidance (de Haro et al., 2013). Recruitment and selection processes often already contain personality tests (Piotrowski & Armstrong, 2006), but these processes can be improved by inserting implicit motive measurements. Earlier research by Lang et al. (2012) noted that the amount of time and expertise needed to code imaginative statements (i.e., implicit motive tests, like the OMT; Kuhl & Scheffer, 1999) and the high-stakes context of selection might hinder the use of free response format implicit motive measurement in recruitment and selection contexts.

However, the authors also state that various written materials that are often part of recruitment and selection procedures (i.e., narratives, such as motivation letters) could be used as alternatives to code motive content in the initial screening phase of recruitment and selection processes without actually having to invite applicants (Lang et al., 2012). These narratives, alongside other ways of measuring implicit motives in recruitment and selection, could be useful for practitioners.

### Conclusion

The goal of the present study was to broaden our understanding of explicit and implicit personality as predictors of income growth trajectories over time. Our results suggested that elements of explicit (Big Five) and implicit personality (Big Three) contributed to objective career success, and more specifically to income. Hence, in future research, both implicit and explicit personality should be integrated because they provide additional and incremental insights when studying work-related processes over time, like career success.

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### Footnotes

<sup>1</sup> Throughout this paper and for reasons of conceptual clarity, we refer to explicit personality as explicit traits and to implicit personality as implicit motives.

<sup>2</sup> Often, research on motives is interchanged with literature on psychological needs (e.g., self-determination theory; Ryan & Deci, 2000). However, literature on psychological needs is rather based on work of Hull (1943), considers needs as “innate organismic necessities that are essential for psychological growth” (Deci & Ryan, 2000, p. 229) and is opposite to the motive literature that rather focuses on the consequences of motive strength for individuals.

<sup>3</sup> We also fitted all models using random coefficient modeling and the six-step approach explained in Bliese and Ployhart (2002). The results were substantially similar to the Mplus LCM analyses and we therefore only report the Mplus LCM analyses.

<sup>4</sup> A more detailed description of the standard LCM is available in overview papers like Curran, Bauer, and Willoughby (2004) and Curran, Obeidat, and Losardo (2010).

<sup>5</sup> Model evaluation criteria are largely based on Hu and Bentler (1999) and Schweizer (2010): Normed  $\chi^2$  below 2 suggests good model fit and below 3 acceptable model fit. RMSEA below 0.05 indicate good model fit and below 0.08 acceptable model fit. CFI between 0.95 and 1.00 suggests good model fit and between 0.90 and 0.95 acceptable fit. SRMR values are expected to stay below 0.10. TLI values above 0.95 indicate good fit and finally, AIC evaluation is based upon informal comparisons.

Table 1

*Means, Standard Deviations, and Intercorrelations for Study Variables.*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Gender (0 = male, 1 = female)	—													
2 Age	-.07	—												
3 Extraversion	.04	-.10	.86											
4 Agreeableness	.39***	.03	.30***	.80										
5 Conscientiousness	.19***	.05	.07	.29***	.80									
6 Emotional Stability	-.21***	.11*	.19***	-.01	.07	.89								
7 Intellect	-.05	.01	.35***	.24***	.15**	.09	.81							
8 Affiliation	.02	-.06	-.03	-.07	.09	-.08	-.11*	—						
9 Achievement	-.08	.04	-.10	-.03	-.01	.02	.13*	-.04	—					
10 Power	-.02	.04	.06	.08	.02	.16**	.20***	-.25***	.11*	—				
11 Income 2011 (Net)	-.36***	.22***	.06	-.10	-.07	.21***	.22***	-.12*	.08	.06	—			
12 Income 2012 (Net)	-.36***	.20***	.07	-.11*	-.05	.22***	.22***	-.13*	.09	.07	.96***	—		
13 Income 2013 (Net)	-.33***	.17**	.10	-.08	-.02	.24***	.20***	-.16**	.06	.02	.90***	.94***	—	
14 Income 2014 (Net)	-.36***	.16**	.07	-.12*	-.02	.27***	.18**	-.17**	.06	.04	.89***	.91***	.95***	—
<i>M</i>	0.52	45.57	3.32	3.93	3.78	3.39	3.73	1.39	2.45	1.82	1,821.38	1,842.40	1,874.97	1,872.53
<i>SD</i>	0.50	11.70	0.65	0.51	0.55	0.74	0.55	1.07	1.43	1.43	877.36	884.18	911.86	897.96

*Note.* Cronbach's alphas for Big Five traits are shown on the diagonal. \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

Table 2

*LCM Results for Models with Predictors (M1a, M1b, M1c)*

	<b>M1a</b>		<b>M1b</b>		<b>M1c</b>	
	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>
Effects of the predictors on the intercept						
Gender ( $\beta_{01}$ )	-513.92***	99.81	-598.38***	90.75	-509.82***	99.63
Age ( $\beta_{02}$ )	14.45***	3.83	14.25***	3.88	14.17***	3.82
Extraversion ( $\beta_{03}$ )	12.72	49.67			17.51	50.07
Agreeableness ( $\beta_{04}$ )	-26.52	52.50			-31.06	52.52
Conscientiousness ( $\beta_{05}$ )	-42.79	46.64			-34.99	46.86
Emotional Stability ( $\beta_{06}$ )	94.71*	46.46			92.92*	46.86
Intellect ( $\beta_{07}$ )	182.48**	48.11			176.19***	49.42
Affiliation ( $\beta_{08}$ )			-78.54 <sup>+</sup>	46.64	-62.71	45.68
Achievement ( $\beta_{09}$ )			37.99	45.57	23.39	44.87
Power ( $\beta_{010}$ )			17.85	46.83	-23.84	46.50
Effects of the predictors on the slope						
Gender ( $\beta_{11}$ )	-3.33	17.48	-5.98	15.62	-3.22	17.23
Age ( $\beta_{12}$ )	-1.72**	0.67	-1.59*	0.67	-1.80*	0.67
Extraversion ( $\beta_{13}$ )	5.27	8.72			4.98	8.68
Agreeableness ( $\beta_{14}$ )	-4.32	9.20			-5.78	9.09
Conscientiousness ( $\beta_{15}$ )	17.19*	8.17			19.89*	8.11
Emotional Stability ( $\beta_{16}$ )	18.79*	8.14			18.80*	8.11
Intellect ( $\beta_{17}$ )	-15.86 <sup>+</sup>	8.43			-15.56 <sup>+</sup>	8.54
Affiliation ( $\beta_{18}$ )			-22.04**	8.02	-24.41**	7.90
Achievement ( $\beta_{19}$ )			-5.75	7.83	-3.42	7.76
Power ( $\beta_{110}$ )			-11.58	8.07	-12.14	8.06
Variance components						
Intercept	594,175.70		624,962.83		595,850.11	
Slope	12,908.27		12,973.73		12,385.91	
$r_{\text{intercept, slope}}$	-.13 <sup>+</sup>		-.15*		-.15*	
Residual	24,155.62		24,810.55		24,813.04	
$R^2$						
Intercept	.23		.18		.24	
Slope	.08		.06		.13	
Model fit indices						
Normed $\chi^2$	2.73		3.30		2.34	
RMSEA	0.08		0.09		0.07	
CFI	0.99		0.98		0.99	
SRMR	0.01		0.01		0.01	
TLI	0.97		0.97		0.97	
AIC	18,264.43		18,274.36		18,258.76	

*Note.* M1a = Model 1a; M1b = Model 1b; M1c = Model 1c. Traits and Motives were z-standardized to foster the interpretation. Gender and age were left in their original metric. 'b values' represent unstandardized regression coefficients.

<sup>+</sup>  $p < .10$ .; \*  $p < .05$ .; \*\*  $p < .01$ .; \*\*\*  $p < .001$

Table 3

*Overview of the estimated models, hypotheses they correspond to, and subsequent results.*

<i>Model</i>	<i>Description</i>	<i>Hypotheses</i>	<i>Findings</i>
<b>M0</b>	Tests the overall trend in income growth.		The overall trend in income growth is linear and positive.
<b>M1a</b>	Tests the effects of control variables and explicit traits on income levels at the starting point (intercept; H1a-e) and income growth (slope; H3a-e).	H1 + H3	Higher emotional stability (H1c) and higher intellect (H1d) predict income levels at the starting point. Higher conscientiousness (H3b) and higher emotional stability (H3c) predict income growth.
<b>M1b</b>	Tests the effects of control variables and implicit motives on income levels at the starting point (intercept; H2a-c) and income growth (slope; H4a-c).	H2 + H4	Lower affiliation motive predicts income growth (H4a).
<b>M1c</b>	Tests the incremental variance of implicit motives beyond explicit traits (M1c versus M1a) at the starting point (intercept; H5a) as well as in income growth (slope; H5b).	H5	Implicit motives explain incremental variance in the income growth slope (H5b) beyond explicit traits.

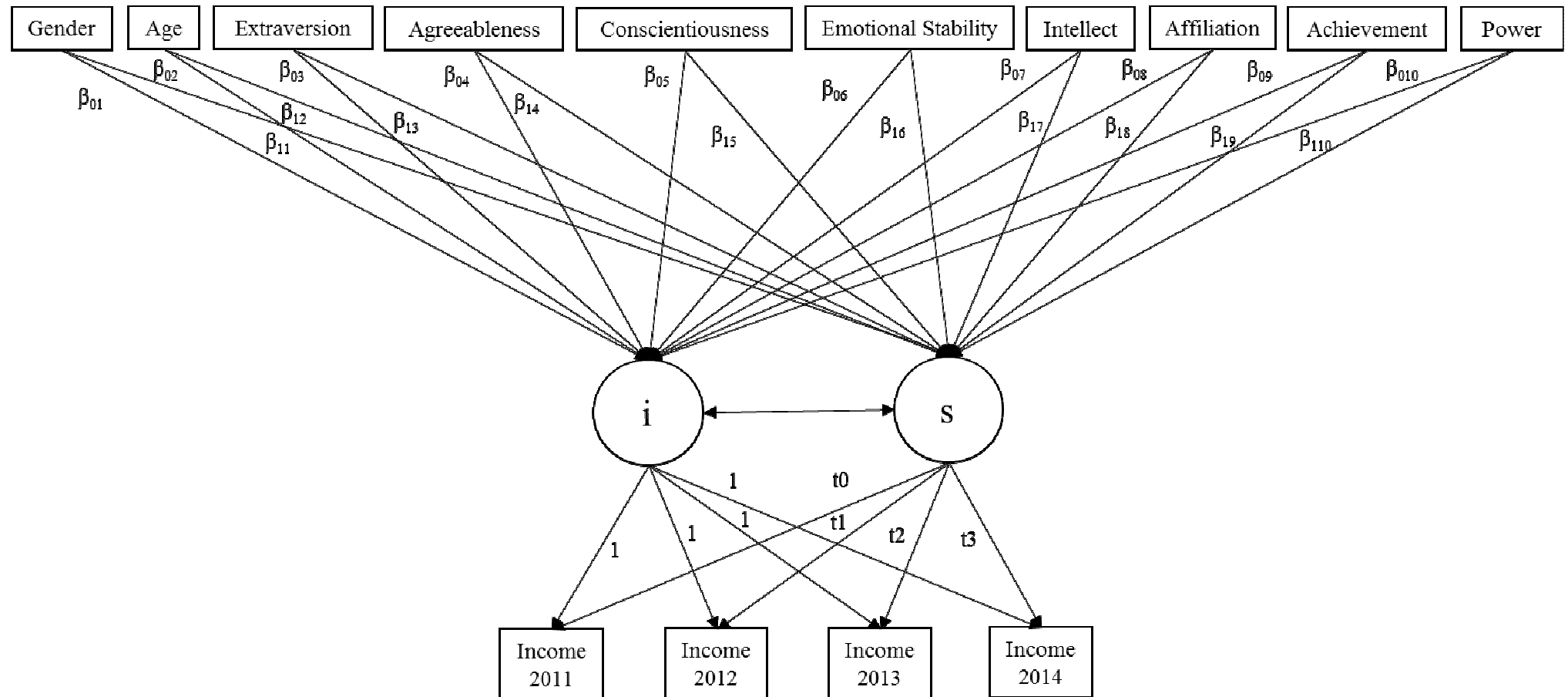


Figure 1. Conceptualization of the full model (M1c).

*i* and *s* refer to the latent variables underlying the intercept and slope, respectively.

Parameter estimates for the predictors of the intercept and the slope are not included in the figure, but can be read in Table 2.

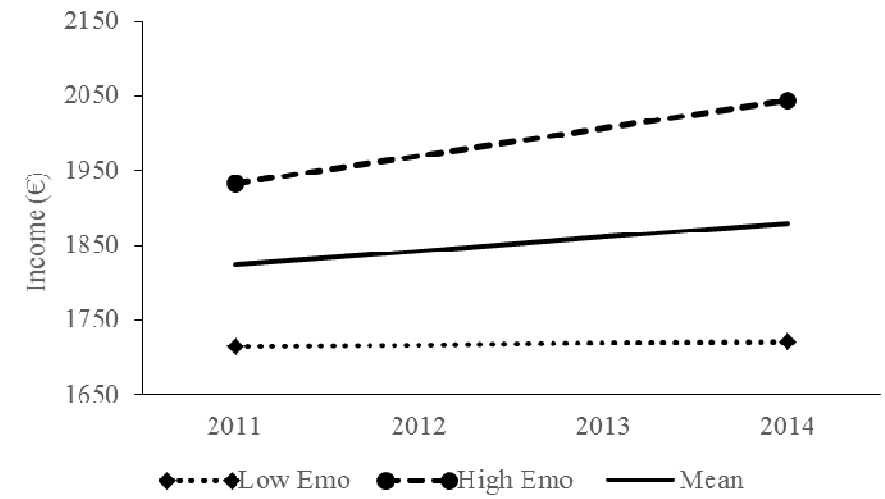
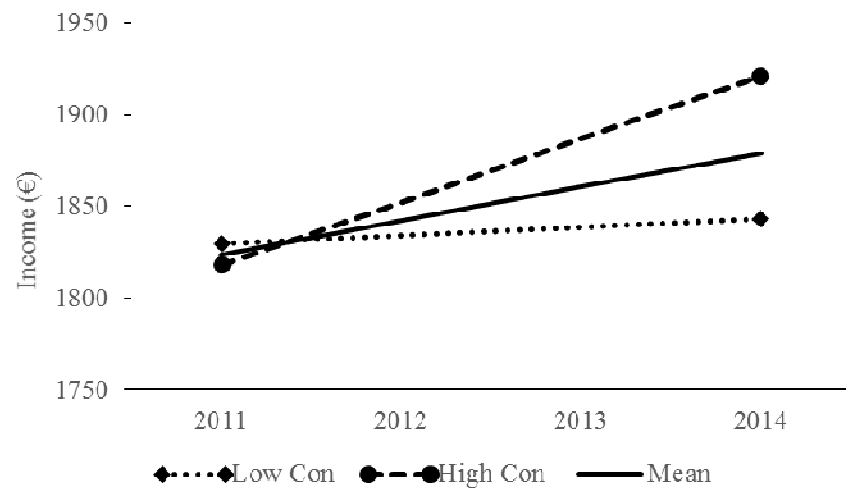


Figure 2a. Income levels in each year as a function of conscientiousness (Con).

Figure 2b. Income levels in each year as a function of emotional stability (Emo).

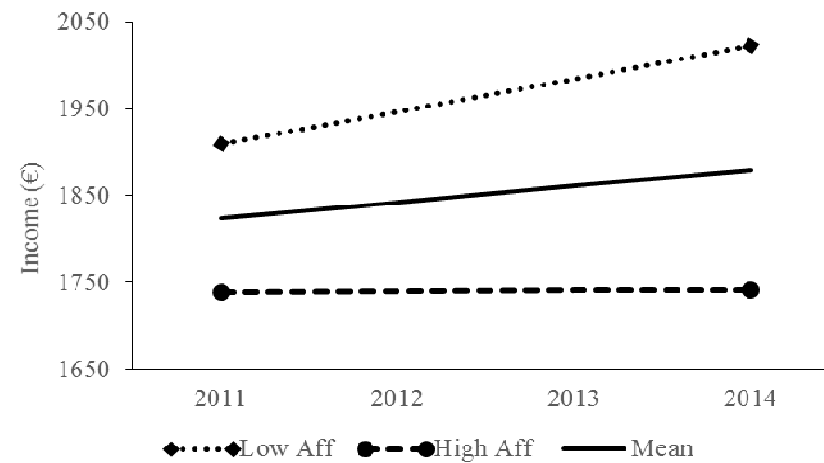


Figure 2c. Income levels in each year as a function of affiliation motive (Aff).